Claims

Claimed is:

1. An open-end spin-rotor with a shaft (1), on the free end of which a support cap (7a, 7b, 7c, 7d) can be attached, wherein the support cap (7a, 7b, 7c, 7d) possesses a support surface (11a, 11b) for the axial bearing of the spin-rotor, therein characterized, in that the shaft (1) has an end face alignment surface (5, 6) and the support cap (7a, 7b, 7c, 7d) possesses a counter alignment surface (9, 10) for the alignment of the support surface (11a, 11b) relative to a plane vertically disposed to the rotor axis.

2. An open-end spin-rotor in accord with Claim 1, therein characterized, in that shaft (1) on its free end additionally possesses an inclined alignment surface and the support cap (7a, 7b, 7c, 7d) has a correspondingly designed centralizing surface for the coaxial centering of the support cap (7a, 7b, 7c, 7d) to the axis of the rotor.

3. An open-end spin-rotor with a shaft (1) on the free end of which, a support cap (7a, 7b, 7c, 7d) can be attached, wherein the support cap (7a, 7b, 7c, 7d) possesses a support surface (11a, 11b) for the axial bearing of the spin-rotor, therein characterized, in that the shaft (1) on its free end has an inclined alignment surface and the support cap (7a, 7b, 7c, 7d) possesses a correspondingly designed centralizing surface, in order to center the support cap (7a, 7b, 7c, 7d) coaxially to the rotor axis and in order the align the support surface (11a, 11b) relative to a plane disposed perpendicularly to the axis of the rotor.

4. An open-end spin rotor in accord with Claim 3, therein characterized, in that the shaft (1) possesses a end face alignment surface (5, 6) and the support cap (7a, 7b, 7c, 7d) has a counter alignment surface (9, 10) for the alignment of the support surface (11a, 11b) relative to a plane disposed perpendicular to the axis of the rotor.

5. An open-end spin-rotor in accord with Claim 1, 2, or 4, therein characterized, in that the counter alignment surface (9, 10) of the support cap (7a, 7b, 7c, 7d) is the lower edge (9) and/or the bottom (10) of the support cap (7a, 7b, 7c, 7d).

6. An open-end spin rotor in accord with one of the Claims 2 to 5, therein characterized, in that the inclined alignment surface is conical or nearly conical and/or exhibits a angle of incline of the alignment surface of about 45°.

7. An open-end spin rotor in accord with one of the foregoing claims, therein characterized, in that the support cap (7a, 7b, 7c, 7d) is made from a ceramic material or of a hard metal.

8. An open-end spin-rotor in accord with one of the foregoing claims, therein characterized, in that the support cap (7a, 7b, 7c, 7d) is adherently fastened by means of an adhesive means onto the free end of the shaft (1).

9. An open-end spin-rotor in accord with one of the foregoing claims, therein characterized, in that the support surface (11b) is flat and is placed perpendicularly to the axis of the rotor by the alignment surface.

10. An open-end spin-rotor in accord with one of the Claims 1 to 9, therein characterized, in that the support surface (11b) is a crowned surface.

11. An open-end spin-rotor in accord with one of the foregoing claims, therein characterized, in that, in the shaft, at least one air escape channel is provided, which at least has one opening in the area of the surface of the outer surface of the end of the shaft covered by the support cap (7a, 7b, 7c, 7d) and possesses at least one opening to the outer side of the shaft (1) which is not covered by the support cap (7a, 7b, 7c, 7d).

12. An open-end spin-rotor in accord with Claim 11, therein characterized, in that the air-escape channel is a groove in the outer surface of the shaft 1 which is at least partially covered by the support cap (7a, 7b, 7c, 7d).

13. An open-end spin-rotor in accord with one of the foregoing claims, therein characterized, in that the support cap (7a, 7b, 7c, 7d) possesses at least one air escape channel (13, 14) from the interior of the cap to the outside of the cap.

14. An open end spin-rotor in accord with Claim 13, therein characterized, in that the air escape channel (13, 14) runs at least partially on the inside of the cap.

15. An open-end spin rotor in accord with Claim 13 or 14, therein characterized, in that a plurality of air escape channels (13), are respectively apportioned at the same angle spacing to one another on the circumference of the support cap (7a, 7b, 7c, 7d).

16. An open-end spin-rotor in accord with Claim 13, 14 or 15, therein characterized, in that at least one air escape channel is an axial boring through the bottom (10) of the support cap (7a, 7b, 7c, 7d).

17. A support cap for attachment on a shaft (1) of an open-end spin-rotor, whereby the support cap (7a, 7b, 7c, 7d) has a support surface (11a, 11b) for the axial bearing of the spin-rotor, therein characterized, in that the support cap (7a, 7b, 7c, 7d) possesses a counter alignment surface (9, 10) for the alignment of the support surface (11a, 11b) relative to an end face alignment surface (5, 6) of the shaft (1) and/or has an inclined centering surface in order to align the support cap (7a, 7b, 7c, 7d) in relation to an inclined alignment surface on the free end of the shaft (1).

18. A support cap in accord with Claim 17, therein characterized, in that the support cap (7a, 7b, 7c, 7d) is constructed in accord with one of the Claims 1 to 16.

19. A procedure for the manufacture of an open end spin-rotor with a support cap (7a, 7b, 7c, 7d), having the steps:

- fabrication of the basic shaping of the shaft (1) with the pin-like projection (4) for the support cap (7a, 7b, 7c, 7d)
- coating of the shaft (1) with a hard layer and
- the fastening of the support cap (7a, 7b, 7c, 7d) on the shaft (1).

20. A procedure for the manufacture of an open end spin-rotor with a support cap (7a, 7b, 7c, 7d), having the steps:

- fabrication of the basic shaping of the shaft (1) with the pin-like projection (4) for the support cap (7a, 7b, 7c, 7d)
- the fastening of the support cap (7a, 7b, 7c, 7d) on the shaft (1) and
- coating of the shaft (1) with a hard layer.

21. A procedure in accord with Claim 19 or 20, characterized by the step:

- hardening the shaft (1) after the fabrication of the basic shape of the shaft (1).

22. A procedure in accord with Claims 19, 20 or 21, characterized by the step:

- heat treatment of the coating during or after the application of the said coating.

23. A procedure in accord with one of the Claims 19 to 22, therein characterized, in that support cap (7a, 7b, 7c, 7d) is fastened by means of an adhesive on the shaft (1).

24. A procedure in accord with Claim 23, therein characterized, in that the adhesive is an adhesive which is thermally curable.

25. A procedure in accord with Claim 23 or 24, therein characterized, in that prior to the attachment of the support cap (7a, 7b, 7c, 7d) onto the shaft (1), the adhesive means is applied to the bottom (10) of the a said support cap and/or on a central end face (6) of the shaft (1).

26. A procedure in accord with one of the Claims 19 to 25, characterized by the step:

    - the fastening of the rotor-bowl on the shaft (1) before or after the fastening of the support cap (7a, 7b, 7c, 7d).

27. A procedure in accord with one of the Claims 19 to 26, therein characterized, in that the open-end spin-rotor is constructed in accord with one of the Claims 1 to 16.

28. An open-end spin-rotor with a shaft (1), on the free end of which a support cap (7a, 7b, 7c, 7d) can be attached, whereby the said support cap (7a, 7b, 7c, 7d) possesses a support surface (11a, 11b) for the axial bearing of the spin-rotor, therein characterized, in that in the shaft(1) and/or in the support cap (7a, 7b, 7c, 7d) at least one air escape channel is constructed.

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